

Remarks

Claims 29-51 are pending. Claims 29, 32, 34, 43, 45, 46, 48, and 49 have been finally rejected. Claim 29 has been amended.

Claim Rejections - 35 U.S.C. § 102(e)

The Examiner rejected claims 29, 32, 34, 43, 45, 46, 48, and 49 under 35 U.S.C. § 102(e) as being anticipated by Zhong et al. (U.S. Pat. No. 6,468,649). Applicants respectfully traverse.

“A claim is anticipated *only* if *each and every* element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference” *Verdegal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) emphasis added.

Zhong fails to disclose at least two elements of claim 29 and necessarily, the claims that depend from claim 29. First, Zhong does not disclose or suggest a coating that is comprised of a self-assembling monolayer and second, Zhong fails to disclose or suggest a self assembling monolayer coating (or any coating for that matter) that is covalently attached to a surface via activation of latent reactive groups.

Applicant thanks the Examiner for explaining her interpretation of the “self-assembling monolayer” (“SAM” hereinafter) limitation. At the outset, Applicant notes that the Examiner interprets “self-assembling monolayer” to mean a layer or coating that is chemically or physically adhered to another layer which itself aligns coats. The Examiner further interprets the phrase to mean that each layer is one molecule thick.

The Examiner’s interpretation, namely that a SAM is merely two layers attached to each other, is at odds to the definition provided in the present Specification and the definition accepted in the art. Contrary to the Examiner’s interpretation, a SAM, in light

Specification and the generally accepted definition, cannot be properly defined as the alignment of one layer with respect to another layer.

As described at page 11, lines 8-13, a SAM is formed of molecules that spontaneous orient themselves with respect to a surface. “Self assembled” refers to the spontaneous orientation of **molecules** rather than layers. For example, the specification states that the composition is brought into sufficient proximity to a surface to permit the **molecules** to spontaneously orient themselves into substantially monolayer form upon the surface (pg. 11, lines 10-13). Likewise, at page 11 line 20 - page 12 line 2, it is described that “when a composition of SAM molecules in carrier solvent is brought into physical proximity with the surface, or interface, the **molecule domains spontaneously and preferentially orient themselves** toward either the solvent or surface/interface, in order to form a monolayer” (emphasis added). Thus, the self-assembling component of a SAM refers to the spontaneous (self) orientation (assembly) of **molecules**.

Zhong do not disclose or even suggest coatings that are comprised of a self-assembled monolayer. The Zhong coating is a two layer system formed from non-amphiphilic molecules that are incapable of self-assembly. Further, neither of the layers are a monolayer, that is, neither layer is a molecule thick. Finally, the attachment of the Zhong first and second coating layers via crosslinking agents cannot properly be considered “self assembly”.

Furthermore, Zhong does not disclose or suggest the use of latent reactive groups to covalently attach a self-assembled monolayer to a surface. The Examiner states that both Zhong and the instant specification “mention diazirines”. However, Zhong fails to disclose the use of latent reactive groups to covalently attach a self-assembled monolayer (or any other type of coating) to a surface. Claim 29 has been amended to more clearly illustrate that the SAM molecules are covalently attached to the surface via activation of latent reactive groups.

Zhong employs “polyfunctional crosslinking agents having functional groups capable of reacting with organic acid groups” Col. 7, lines 32-38. The Zhong crosslinking agent crosslinking agent “serves two purposes” 1) to cross link the first polymeric coating and 2) to covalently bond to the second polymeric coating (Col. 8, lines 8-10). Incidentally, the crosslinking of the first coating is further evidence that the individual Zhong layers are not monolayers.

Zhong does not disclose or suggest the use of latent reactive groups to covalently attach self-assembling monolayer molecules (or any other type of molecule) to a device surface. Therefore, Zhong does not anticipate claim 29 or any claim depending therefrom. Applicant respectfully requests that the rejection be withdrawn.

In view of the foregoing, it is submitted that each of the pending claims is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested. If the Examiner feels that prosecution of the present application can be materially advanced by a telephonic interview, the undersigned would welcome a call at the number listed below.

Respectfully submitted,



Matthew J. S. Graham
Registration No. 54,647

Customer No. 22859
Fredrikson & Byron, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, MN 55402-1425 USA
Telephone: (612) 492-7000
Facsimile: (612) 492-7077

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 06-1910.

4165801_1.DOC